4/10/2001-2079

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

APR 10 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Christopher T. Penny
Project Coordinator
Installation Restoration Section (South)
Environmental Program Branch
Environmental Division
Atlantic Division (LANTDIV), Code 182
Naval Facilities Engineering Command
1510 Gilbert Street
Norfolk, VA 23511-2699

Re: Atlantic Fleet Weapons Training Facility, Vieques Island, PR
EPA I.D.# PRD980536221, EPA Comments on:

1) Final RCRA Facility Investigation (RFI) "Master Work Plan;"
2) Final "Site Specific Work Plan" Phase I RFI;
3) "Description of Current Conditions Report;"
4) Final Work Plan for [Supplemental] "Groundwater Baseline Investigation;"
5) Draft Work Plan Soil and Groundwater Background Investigation; and
6) Department of the Navy letter of March 14, 2001

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) Region 2 has completed its review of the Final RCRA Facility Investigation (RFI) "Master Work Plan," "Site Specific Work Plan" Phase I RFI, the "Description of Current Conditions Report," the Final Work Plan for [Supplemental] "Groundwater Baseline Investigation," and the Draft Work Plan Soil and Groundwater Background Investigation, which were submitted on behalf of the Navy by CH2MHILL's [Mr. Martin Clasen's] letter of February 19, 2001. In addition, EPA has reviewed your letter of March 14, 2001 and the Navy's Responses enclosed with it (which were also previously Emailed to EPA as Draft Responses on February 2, 2001) to EPA's November 29, 2000 comments on the previously submitted versions of above documents. The above documents were submitted pursuant to requirements of the RCRA 3008(h) Order on Consent (the Order), which became effective January 20, 2000. This letter is addressed to you as the Navy's designated Project Coordinator, pursuant to Section IX of the Order.

Final RFI "Master Work Plan" and "Site Specific Work Plan - Phase I RFI"

EPA requested our contractor, Booz Allen & Hamilton to review these two documents, which were submitted to address EPA's November 29, 2000 comments on the previously submitted versions of these work plans. As you are aware, a conference call was held on January 26, 2001 involving EPA, Booz Allen, and Navy representatives to discuss how to acceptably address EPA's November 29, 2000 comments on the previously submitted versions of these work plans. While overall the February 2001 submitted versions of the two work plans are close to being judged acceptable by EPA, there are still several issues which have not been fully satisfied. Therefore, the February 2001 RCRA Facility Investigation (RFI) "Master Work Plan"and "Site Specific Work Plan" Phase I RFI are not approved as submitted. The remaining issues are discussed below and in Enclosure No. 1, the Booz Allen prepared Technical Review, dated March 14, 2001 [revised by EPA March 27, 2001], which EPA has reviewed and concurs with.

In addition to the issues discussed in Enclosure No. 1, EPA has several comments on the Site Specific Work Plan.

A) Section 2.12.2 must be revised to indicate that the results of the visual inspection of photo-identified sites and interviews with present and former facility personnel regarding those photo-identified sites will be presented in the RFI **Phase I** Draft Final Report, not the Final RFI Report as presently written.

B) Section 2.13 (Potential Areas of Concern [PAOCs]), identifies four specific PAOCs and refers to another 8 PAOCs, that are not specifically identified. However, no steps or tasks are included in the Site Specific Work Plan describing how and when evaluation of the 12 PAOCs will be completed to determine whether or not a release of hazardous waste or constituents has occurred from these PAOCs. The Navy's responses #2 and #4 given in Attachment A of your March 14, 2001 letter (and previously Emailed to EPA as Draft Responses on February 2, 2001) as regards EPA's comments on the previous edition of the Description of Current Conditions Report, indicated that such an evaluation will be performed. The Site Specific Work Plan must describe [briefly is acceptable] how and when evaluation of the 4 identified PAOCs will be completed to determine whether or not a release of hazardous waste or constituents has occurred from these PAOCs, and what steps will be taken to more precisely locate and evaluate the other 8 PAOCs. Also, as indicated in the Navy's responses #2.c and #4.c given in the above cited Attachment A, the Site Specific Work Plan must clearly indicate that the results of that evaluation will be included as part of the RFI Phase I Draft Final Report.

Furthermore, EPA does not agree with the statements in your letter of March 14, 2001 that "...the nature and extent of EPA's [November 29, 2000] comments [on] the [Navy's] September 30th [2000] submission ...are inconsistent with the strategy that was agreed upon at the [August 8, 2000 Joint Interest Group Meeting (JIG) in Tampa Florida]." First of all, EPA made it clear at that JIG meeting and at previous JIG meetings, that because the draft work plans were not submitted to it for review prior to the JIG meeting, while EPA could offer comments on the Navy's "strategy," EPA could not give definitive approval in advance of its receipt and review of the actual work plans. Secondly, as was you are aware, because of funding limitations, EPA's technical consultant for review of the work plans, Booz Allen Hamilton, did not participate in the August 8, 2000 JIG meeting. Thirdly, even if the documents submitted by the Navy on September 30, 2000 were consistent with the "strategy that was agreed upon" at the August 8th JIG meeting, that did not mean, as was pointed out at the JIG meeting, that EPA was obligated to approve the submitted work plans, without commenting on them.

Since this is the third submittal of these work plans [in response to two previous rounds of EPA comments], and the scope of the remaining issues is limited, rather than re-submitting complete copies of the two work plans to address the remaining issues, EPA recommends that acceptable addendums to the work plans be submitted to address the remaining issues discussed above and in the enclosed Technical Review (Enclosure No. 1). However, if the Navy prefers, you may re-submit complete work plans, revised to address the remaining issues.

Pursuant to Section XI of the Order, within 75 calendar days of your receipt of this letter, please submit either submit an appropriately revised RFI "Master Work Plan" and Phase I RFI "Site Specific Work Plan," addressing both the above comments and those given in the enclosed Technical Review, or acceptable addendums to those work plans. If you wish to request a meeting, pursuant to Section XI of the Order, to discuss the above comments and/or those in the enclosed Technical Review, please indicate in writing within 15 calendar days of your receipt of this letter.

<u>"Description of Current Conditions Report"</u>

EPA has also completed its review of the "Description of Current Conditions Report," also submitted by CH2MHILL's [Mr. Martin Clasen's] letter of February 19, 2001, and has determined that it is acceptable as submitted. However, this approval is conditioned on the Site-Specific RFI Work Plan being acceptably revised to include evaluation of the PAOCs, as discussed above.

<u>Final Work Plan for [Supplemental] "Groundwater Baseline Investigation"</u>

Although the Final Work Plan for [Supplemental] "Groundwater Baseline Investigation" (the Supplemental Groundwater Work Plan), also submitted by

CH2MHILL [Mr. Martin Clasen] on the Navy's behalf on February 19, 2001, addressed our specific prior comments, EPA requests clarification regarding three issues noted by our consultant, Booz Allen Hamilton, which are discussed in Enclosure No. 2.

In addition, to the issues noted in Enclosure No. 2, EPA has several other comments on the Supplemental Groundwater Work Plan:

A) The statement in Section 2.2 regarding the groundwater analytical program should state that groundwater will be analyzed for all constituents included in Appendix IX of 40 C.F.R. Part 264 [not "compounds listed in Appendix IX USEPA Code of Federal Regulations"], excluding all metals. Also, a statement should be added after that, explaining that groundwater in the four wells to be sampled under this work plan has previously been analyzed for all Appendix IX metal constituents, and the results are included in Appendix B of the work plan.

B) EPA finds the statement in Section 3 (Report) that "The interpretation is limited to comparing measured sample concentrations to the USEPA Region IX risk-based concentration (RBC) screening values and MCLs" to be an inadequate proposal for screening for unacceptable threats to human health. Firstly, no reference for the Region IX risk-based concentration (RBC) screening values is cited in Section 3 or Section 5 (References) of the work plan, or elsewhere, nor are the proposed RBC values themselves listed any where in the work plan. Secondly, EPA is aware of Region IX Preliminary Remediation Goal (PRG) concentration screening values, but not Region IX risk-based concentrations (RBCs). Please use the correct terminology. Thirdly, if Region IX PRGs are to be utilized, the Supplemental Groundwater Work Plan must clearly state that the Region IX **Tap Water** PRG concentrations, or the maximum contaminant levels (MCLs) given at 40 C.F.R. Part 141 Subpart B, whichever are lower, will be utilized for screening the groundwater results to determine whether there are possible unacceptable threats to human health and whether further investigations and/or other measures are warranted..

C) Section 2.3.2 (Data Validation) and Section 3 (Report) of the work plan must clearly indicate that the data from the Appendix IX metal constituent results included in Appendix B of the work plan will be validated [see also D below] and that those results will be incorporated into the Draft Final Report on the results of implementation of the Supplemental Groundwater Work Plan.

D) Enclosure No. 4 to this letter gives EPA's comments on the Data Validation Reports submitted to us on September 8, 2000 by Baker Environmental on the Navy's behalf, for the data included in the *November 1999 Results of the Hydrogeologic Investigation*. In implementing the Supplemental Groundwater Work Plan, please insure that all analytical requirements and laboratory deliverables necessary for evaluation of the validity of any data gathered, as per all applicable requirements discussed in Enclosure 4, are met and provided as part of the data validation package submitted with the Draft Final Report on the results of implementation of the Supplemental Groundwater Work Plan.

E) The November 4, 1999 report *Results of the Hydrogeologic Investigation Vieques Island Puerto Rico,* which was submitted to EPA by your letter of March 16, 2000, has the Section on Piezometers in Appendix F (Well and Piezometer Construction Diagrams) stamped "Attorney Work Product/Attorney Privileged Information - Do Not Disclose." In order for EPA to consider the November 4, 1999 *Results of the Hydrogeologic Investigation Vieques Island* data as partially satisfying requirements of the Order, and therefore, no longer required under the "Groundwater Baseline Investigation" work plan, the data must not be subject to "Attorney Privileged" restrictions. Therefore, please either re-submit the report on *Results of the Hydrogeologic Investigation Vieques Island Puerto Rico*, with all "Attorney Privileged Information" notations removed, or a letter indicating that the November 4, 1999 report *Results of the Hydrogeologic Investigation Vieques Island Puerto Rico* is no longer subject to "Attorney Work Product/Attorney Privileged Information" restrictions.

Since this is the third submittal of these work plans [in response to two previous rounds of EPA comments], and the scope of the remaining issues is limited, rather than re-submitting complete copies of the Supplemental Groundwater Work Plan to address the issues discussed above and in Enclosure No. 2, EPA recommends that an addendum to the work plan would be acceptable to address the remaining issues discussed above in Enclosure No. 2. However, if the Navy prefers, you may of course submit a complete work plan, revised to address the remaining issue.

Pursuant to Section XI of the Order, within 75 calendar days of your receipt of this letter, please submit either an addendum to the work plan addressing the remaining issues discussed above and in Enclosure No. 2, or an appropriately revised Supplemental Groundwater Work Plan addressing those issues. If you wish to request a meeting, pursuant to Section XI of the Order, to discuss the above comments and/or those in the enclosed Technical Review, please indicate in writing within 15 calendar days of your receipt of this letter.

Draft Work Plan Soil and Groundwater Background Investigation

As you are aware, this "background" work plan was developed subsequent to EPA's letter of November 29, 2000, and was never previously submitted to, or reviewed by, EPA. EPA requested our contractor, Booz Allen & Hamilton to review the background investigation work plan. Their technical review comments, which EPA has reviewed and concurred with are provided in Enclosure No. 3.

In addition to comments given in Enclosure No. 3, the Introduction and Purpose and Objectives portions of this work plan must more clearly indicate that data gathered under it will be utilized in conjunction with data gathered under the RFI Phase I, and if required "full RFI," work plans, to assess whether or not releases of inorganic hazardous constituents have occurred from the SWMUs and AOCs investigated, or are naturally occurring.

As discussed above, please submit a revised work plan and/or written responses within 75 calendar days of your receipt of this letter, addressing the above comment and those given in Enclosure No. 3. If you wish to request a meeting, pursuant to Section XI of the Order, to discuss the above comments and/or those in the enclosed Technical Review, please indicate in writing within 15 calendar days of your receipt of this letter.

Public Notice and Public Comment

In your letter of March 14, 2001, you recommend that the above work plans, following their review and acceptance by EPA, undergo public comment prior to their implementation. EPA concurs.

EPA recommends that, upon their approval by us, the Navy arrange for all the above documents, including the "Description of Current Conditions Report" (since it constitutes part of the RFI work plan) to be placed in a public repository on Vieques Island, and a Public Notice of their availability for inspection and public comment be given.

If you have questions regarding any of the above, please telephone Mr. Tim Gordon of my staff, the designated Projector Coordinator under the Order, at (212) 637-4167.

Sincerely,

Raymond Basso, Chief
RCRA Programs Branch

Enclosures (4)

ENCLOSURE #2

TECHNICAL REVIEW

FINAL WORK PLAN FOR GROUNDWATER BASELINE INVESTIGATION AT U.S. NAVY'S EASTERN MANEUVER AREA

ATLANTIC FLEET WEAPONS TRAINING FACILITY VIEQUES ISLAND, PUERTO RICO

REPA2-0202-010
MARCH 28, 2001

GENERAL COMMENTS

1. The work plan provides only limited guidance regarding the sampling and analysis requirements for this project. However, the work plan should be adequate when used in conjunction with the Master Work Plan, particularly the standard operating procedure for low-flow groundwater sampling.

SPECIFIC COMMENTS

Section 2.2.1, Groundwater Sampling Procedures, Page 2-2

1. The groundwater sampling procedures indicate that samples will be collected using low-flow procedures at depths less than 30 ft, but is less clear regarding methods of sample collection at greater depths. Appendix A provides well completion diagrams which indicate that the wells vary in depth from 50 to 70 ft. Given that the depth of all of the wells is greater than 30 ft, the text should more specifically describe how the samples will be collected. In addition, bladder pumps are capable of collecting low flow groundwater samples from this depth.

Table 2-1, Required Containers, Preservatives, and Holding Times for Water Samples, Page 2-3

2. Preparation and analysis method numbers should be listed for each of the analyses listed on the table.

   Section 2.2 indicates that metals analyses will not be performed, but Appendix IX metals, lead, and arsenic are included on this table. In addition, Toxicity Characteristic Leaching Procedure (TCLP) analyses are listed, but their intended use is not described in the text. If these analyses will not be performed they should be deleted from the table; otherwise, their purpose should be clarified.

Section 2.3, Sample Analysis and Validation, Page 2-6

3. The reference for EPA's National Functional Guidelines for Organic Data Review should be updated to 1999 in this section and in Section 2.3.2.1

ENCLOSURE #3

TECHNICAL REVIEW

FEBRUARY 2001, DRAFT WORK PLAN AND SAMPLING AND ANALYSIS PLAN SOIL AND GROUNDWATER BACKGROUND INVESTIGATION

ATLANTIC FLEET WEAPONS TRAINING FACILITY
VIEQUES ISLAND, PUERTO RICO

REPA2-0202-009
March 14, 2001

GENERAL COMMENTS

1. The February 2001, Draft Work Plan and Sampling and Analysis Plan for Soil and Groundwater Background Investigation (Work Plan) includes groundwater sampling to determine background concentrations of metals in groundwater. However, the Work Plan provides no discussion of basic hydrogeology of the site or any rationale for the wells, both existing and proposed, that will be used to establish groundwater background concentrations. Similarly, no discussion of the screening depth and the different saturated strata present on the island (e.g., bedrock and unconsolidated alluvium) has been provided. The potential impact of different strata on background groundwater quality has not been discussed. While the Work Plan for the Groundwater Baseline Investigation provides some discussion of the hydrogeology of the island, this material has not been referenced or summarized in the text of the Work Plan and Sampling and Analysis Plan for the Soil and Groundwater Background Investigation. Moreover, it is not clear that the material provided in Groundwater Baseline Investigation Work Plan is sufficient to justify the selection of wells to be used in establishing background groundwater concentrations.

SPECIFIC COMMENTS

Section 2.1, Geology and Soils, Page 2-1

1. With the exception of beach, dune, and alluvial deposits, this section gives the impression that there is no soil horizon above bedrock. Presumably, residual soils from above the bedrock will be the focus of this study. The discussion should be clarified, and the soil types should be related to the five soil series (e.g., Descalabrado, Vieques, Coamo) described in the Master Work Plan.

In addition, there is no discussion regarding vertical variations in lithology. Such a discussion, including general cross-section diagrams, should be added to support selection of the 4–5 ft. depth interval for collection of subsurface soil samples. The purpose of the discussion should be to demonstrate that the sample interval will be representative of the entire vertical cross-section.

Section 2.1, Geology and Soils, Page 2-2

2. The Site-Specific Work Plan for Solid Waste Management Unit (SWMU) 2 indicates that soil samples will be collected at the off-loading area. It is not clear whether this area contains beach sands. However, if beach sands may be present at the sampling locations, the discussion regarding soil types at SWMU 2 should indicate that soil types Kv and Qb are present at the site.

Figure 2-1, Existing and Proposed Background Sample Locations, Page 2-4

3. The label for sample Kv-4 is incorrectly shown as KTd-4 and should be corrected. In addition, samples SS-01 through SS-04 are identified as T1 samples. However, the identifier T1 has not been described elsewhere. The T1 identifier should be discussed.

Section 2.3.1, Groundwater Sampling Locations and Analysis, Page 2-4

4. This section indicates that samples will be collected from two existing piezometers. Figure 2-1 shows three piezometers. The piezometers from which samples will be collected should be clarified.

   It appears that the groundwater data will be evaluated as a single data set. Justification should be provided for doing so. Where possible, geochemical data should be used as evidence that groundwater conditions are consistent across the island and that groundwater quality data can be combined into a single background, regardless of the strata and location from which the sample is taken.

   Insufficient background and discussion are provided to justify the selection of wells for use in establishing background (see General Comment No. 1).

Section 3 Statistical Analysis, Page 3-1

5. The discussion of statistical analysis does not clearly indicate whether statistics will be computed to describe each soil type individually or to characterize all soil samples as a single group. Similarly, the discussion does not clearly indicate if soil samples from potential release areas will be compared only to statistics derived from the same soil type or from the larger aggregated set of soil samples. The text should be revised to clearly indicate how background concentrations will be established relative to individual soil

types and to identify the data set(s) that will be used during comparisons of soils collected at specific, potential release areas. Use of aggregate data sets combining chemical data from all soil samples, regardless soil type, will require justification.

Section 3.2, Incorporating Background Analytical Results into Remedial Investigations and Feasibility Studies, Page 3-5

6. The Work Plan (pg. 3-5) indicates that "one of the most important uses of background analysis is for identifying constituents of concern (COCs) associated with Navy releases." Citing EPA risk assessment guidance, the Work Plan further indicates that "if inorganic chemicals are present at the site at naturally occurring levels, they may be eliminated from the quantitative risk assessment." The Work Plan specifically states that "while the cumulative risk associated with background and site release may exceed an acceptable risk level (triggering remediation), when evaluated separately the site release may pose insignificant risks," and "in this case, cleanup would be unwarranted."

   The Work Plan has failed to note that the EPA risk assessment guidance referenced above (U.S. EPA, 1989, pg. 5-19) also states, immediately after the above citation, that "in some cases, however, background concentrations may present a significant risk, and, while cleanup may or may not eliminate this risk, the background risk may be an important site characteristic to those exposed." Thus, it may not be possible to eliminate background metals from COC lists used to quantify risks at the site. The treatment of background in the risk assessment can only be determined at the time of the risk assessment based on the specific characteristics of the data. The most immediate use of the background data during the site-specific investigation will be to determine if levels of metal identifed at individual SWMUs are background or indicative of a release. If it is determined that a release has occurred, further investigation may be required to fully characterize the release. The Work Plan should be revised to more accurately reflect the potential uses of background data during the planned site-specific investigation.

7. The last paragraph states that it is important to specify during the data quality objectives (DQO) process, the differences between site and background means/medians. It is inadequate to simply state that this is important. A discussion should be included that actually states the differences that are important to detect and describes how this data requirement was translated into the development of the sampling and analysis strategy.

Section 4.2, Sample Analysis and Validation, Page 4-8

8. The reference for National Functional Guidelines for Organic Data Review should be updated to October 1999.

Section 4.2.1.2, Blanks, Page 4-9

9. If temperature blanks will not be submitted, then the method by which cooler temperature will be determined should be specified. The Master Work Plan requires temperature blanks for all coolers.

Section 4.2.1.3, Duplicates, Page 4-9

10. The discussion regarding duplicate samples should be expanded to specify that soil samples will be thoroughly mixed prior to splitting and describe how duplicate samples will be selected.

Section 6, Contractual Services, Page 6-1

11. The final version of this Work Plan should provide the names of the specific subcontractors to be used on the project.

References:

U.S. EPA, 1989. Risk Assessment Guidance for Superfund, Volume I Human Health Evaluation Manual (Part A), EPA/540/1-89/002.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

ENCLOSURE #4

Tx-Rec. Dec. 4, 00

DATE: NOV 2 4 2000

SUBJECT: Review of *Results of the Hydrogeologic Investigation Report*, and associated Data Validation Reports
Atlantic Fleet Weapons Training Facility, Vieques, PR

FROM: Robert Runyon, Chief
Hazardous Waste Support Branch

TO: Ray Basso, Chief
RCRA Programs Branch

This is in response to your memo to Dore LaPosta dated October 20, 2000 requesting review of *Results of the Hydrogeologic Investigation Report*, November 4, 1999, and associated Data Validation Reports submitted to EPA by the US Navy to satisfy certain requirements of a January 2000 RCRA 3008(h) Corrective Action Order for the Atlantic Fleet Weapons Training Facility, Vieques, PR. As the RCRA QA function is in the Hazardous Waste Support Branch, your request was forwarded to me. Results of our review are as follows.

Results of the Hydrogeologic Investigation Report

These data were submitted to EPA to satisfy certain requirements of a January 2000 RCRA Corrective Action Order. This Order has not been provided, therefore we do not know the requirements specified and thus cannot determine acceptability of these data. We have reviewed Section 3.0 Field Investigation Activities, and Section 4.0 Investigation Results, from a general technical perspective.

Laboratory Analytical Program - The laboratory used in this investigation was *Savannah Laboratories*, located in Savannah, Georgia. The samples were analyzed by this lab for explosive residues including Nitroaromatics- Nitramines, PETN and Nitroglycerin in accordance with SW-846 Method 8330. This report does not elaborate on the qualifications of this laboratory specific to a documented Quality System. There is no indication of a performance and capability assessment done by the Navy prior to procurement nor during the implementation of the contract. Without this information, the validity of the data cannot be clearly determined.

Section 4.1.3 QA/QC Sample Results - a) It is stated in this Report that an independent, third party data validator was used to perform data quality evaluations. However, the name and qualifications of the firm used are not provided. In addition, the specific criteria used for data evaluation were only referenced as that established by the USEPA Region II guidelines, the Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analyses with Region II modifications, and professional judgement. It is stated in this Report that the samples were analyzed for explosives residues, thus the Organic and Inorganic regional data validation procedures do not apply. This Region does have an SOP for Method 8330, 11/92, rev. 0 which may be pertinent to the data acquired. The specific revision of Method 8330 used would have to be provided.

It is stated in this Report that "no explosive compounds were detected on the QA/QC samples." It is recommended that this text be clarified to define this statement relative to the quantitation limits presented for the QA/QC samples in Appendix I.

Organic Data Validation Report - Explosives, Nitroglycerin/PETN Analysis

There are no raw data for the organic samples (chromatograms, Quant Report, etc) in the "Data Validation Report, CH2M HILL, Vieques Site, PR" by Heartland Environmental Services, Inc. (HES). There are no data for QA/QC samples (surrogate, matrix spike, matrix spike duplicate, method blanks, LCS, etc). However, the forms used in the CLP/SOW are present for the samples, calibration (initial & continuing), surrogate recoveries, etc.

It is stated in the Data Narrative: "Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to these requirements and deliverables. This screening assumes analytical results are correct as reported amd merely provides interpretation of the reported quality control results. A minimum of 10% of all laboratory calculations have been verified as part of this validation." This statement implies that the data were not validated in accordance with Region 2 policy (all data are to be validated), or Region 2 data validation SOPs.

The Form Is show no reported values for any explosive compounds for all water and soil samples. The surrogate (3,4-dinitrotolune) recoveries (Form II) for the water samples including MS/MSD and LCS are within the QC limits (26-165%) set by the lab. The recoveries were from 78% to 106%. The surrogate recoveries for the soil samples were better (92% to 104%) than the water samples. The lab set the QC limits to 22-128%. The calibration (Form 6) lists the values for the response factors and shows only a few compounds not meeting the <15 % Diff criteria. Form 4, Method Blank lists the associated samples and mentions "No Contamination" under "COMMENTS:". The MS/MSD (Form 3) and LCS (Form #) recoveries are within their respective QC limits set by the lab. All this would be verified through the raw data.

Therefore, while the Data Validation report indicates all QC requirements were met, we are unable to verify this statement due to missing raw data..

Inorganic Data Validation Report

Savannah Laboratories analyzed water samples for total as well dissolved concentrations of 20 metals, and all soil samples for 17 metals. SW-846 methods were utilized with the QC analyses being reported on the CLP Inorganic Data Reporting Forms. Heartland Environmental Services, Inc. performed the initial validation using the Region 2 validation SOP for the CLP Target Analyte List (TAL) metals.

The validation report for each SDG contains the final data sheets, data, assessment narrative, Region 2 validation SOP checklist, and few QC analysis forms. No raw data has been provided. This review is, therefore, based on limited information provided, and can only verify whether the validation flags are correctly applied as warranted by different QC analyses outside the control limits.

The Instrument Detection Limits (IDLs) are not provided, nor are the reporting limits available in the reports. It is, therefore, not possible to determine whether the concentration flags (U & B) are correctly applied. The IDLs would also be used in evaluating the ICP serial dilution analysis. Apparently, Percent Difference (PD) results for a number of metals is outside the control limits (± 10%).

The Heartland validator has correctly flagged (J) results due to the matrix spike recoveries being outside the control limits.

Ground water samples were analyzed for dissolved and total concentrations of metals. Dissolved concentration of an analyte must not exceed the total concentration of a sample. The data reported include dissolved concentrations that exceeded the total concentrations for a number of metals. The Heartland validator did not make a note of it and did not answer the question correctly in the Dissolved/Total Concentration criteria specified in the Region 2 validation SOP. The following sample results (both total and dissolved concentrations) should have been rejected:

R ----------> Zn ----------> Navy - 7 - GW {Dissolved Concentration = 0.050 mg/L & Total Concentration = 0.028 mg/L}

R ----------> Zn ----------> Navy - 8 - GW { Dissolved concentration = 2.6 mg/L & Total concentration = 0.46 mg/L}

In conclusion, the accuracy of reporting of results cannot be ascertained without the IDLs and reporting limits. The ICP serial dilution cannot be evaluated without IDLs. Dissolved concentrations vs. total should be carefully evaluated for all metals in accordance with the criteria specified in the Region 2 validation SOP. Therefore, in order to arrive at conclusions regarding data useability, the complete data package would need to be reviewed.

I hope this information is useful to you. If you have any questions or would like further information, please contact me or Shari Stevens at (732) 906-6994.

ENCLOSURE #1

TECHNICAL REVIEW

FEBRUARY 2001 FINAL WORK PLANS FOR THE RCRA FACILITY INVESTIGATION

ATLANTIC FLEET WEAPONS TRAINING FACILITY
VIEQUES, PUERTO RICO

Repa2-0202-008
March 14, 2001 [revised by EPA on March 27, 2001]

Booz•Allen & Hamilton Inc. reviewed the Final Work Plans for the RCRA Facility Investigation (RFI) at the Atlantic Fleet Weapons Training Facility in Vieques, Puerto Rico to ensure that comments on the Draft documents had been adequately addressed. The following comments do not appear to have been fully addressed in the Final Work Plans. The remaining issues regarding these comments are identified in the attached review. The comment numbering used in the Navy's "Draft Response to Comments" [on EPA's November 29, 2000 letter], which was emailed to EPA on February 2, 2001, [and subsequently transmitted to EPA by the Department of the Navy's letter of March 14, 2001 from Mr. Christopher Penny] has been used to identify the comments that require further resolution.

EPA COMMENTS [In November 29, 2000 letter]

1. ***Original Comment:*** Section 2.1.2, for Solid Waste Management Unit (SWMU) #1, the Camp Garcia Landfill, describes specific landfill cells and trenches as being identified by aerial photographic interpretation done by ERI in 2000 and indicates the overall impacted area was determined to be approximately 55 acres. Figure 2-2 would appear to display those features; however, they are not specifically labeled on the figure, nor is the apparent outline around the landfill specifically labeled, and the basis for establishing that outline is not described. Also, the date of the displayed photograph is not given. These missing details hinder EPA's ability to assess the adequacy of the proposed investigations for this SWMU.

   Remaining Issue: The revised text does not provide any additional explanation of the basis for delineating the landfill boundaries as shown in Figure 2-2, as requested in EPA's November 29, 2000 comment letter.

ISSUES REGARDING GENERAL COMMENTS from Booz, Allen & Hamilton given in the TECHNICAL REVIEW enclosed with EPA's November 29, 2000 letter:

None

ISSUES REGARDING SPECIFIC COMMENTS given in the TECHNICAL REVIEW enclosed with EPA's November 29, 2000 letter:

DRAFT PROJECT MANAGEMENT PLAN

Section 2.1.3, SWMU-1—Camp Garcia Landfill, Page 2-3

5. ***Original Comment:*** The Description of Current Conditions Report indicates that a cap composed of compacted soil was installed on the landfill in 1978. Therefore, the proposed surface soil sampling is inappropriate. In order to assess the contents of the landfill and the potential that a release has occurred, soil borings and/or test pits are warranted.

   Remaining Issue: In the conference call on January 26, 2001, an agreement was reached that soil borings and/or test pits would not be required if language was added to the Work Plan to indicate that institutional controls would be placed on the landfill that precluded intrusive activities. Such text could not be located in the Final Work Plans. The text should be added to Section 2.1.3 of the Project Management Plan and Section 2.1.3 of the Site Specific Work Plan as rationale for not collecting subsurface soil samples.

12. ***Original Comment:*** The USEPA and the Puerto Rico Environmental Quality Board (PREQB) representatives should be added to the project organization chart as has been done in Figure 3-1 of the Master Quality Assurance Project Plan (QAPP).

    Remaining Issue: "USEDA" should be corrected to "USEPA," and the USEPA representative should be corrected to Mr. Timothy Gordon.

FINAL MASTER FIELD SAMPLING PLAN

Table 2-1, Required Containers, Preservatives, and Holding Times for Water Samples, Page 2-6

18. ***Original Comment:*** The preservation requirements for liquid toxicity characteristic leaching procedure (TCLP) samples should be clarified. According to Method SW-1311, liquid samples containing less than 0.5 percent solids are not extracted using the leaching procedure. In this case, the preservation requirements in Table 2-1 for the TCLP methods are appropriate. However, if the liquid samples contain greater than 0.5 percent solids, the solid portion is separated and carried through the leaching procedure. Field acidification of samples will bias the leaching procedure. Therefore, samples should not be acidified in the field if greater than 0.5 percent solids are anticipated.

    Remaining Issue: The original comment pertained only to the liquid TCLP analyses listed on the table, and was primarily intended to address inorganic samples. The general footnote, "groundwater samples with greater than 0.5 percent solids will not be field

acidified," is inappropriate. Based on further consideration, the original comment should be disregarded, and the footnote should be deleted.

Original Comment: Preparation and analysis method numbers should be specified for each type of analysis. For CLP methods, the Statement of Work (SOW) number should be specified.

Remaining Issue: The preparation method numbers should be added, and the analytical method for cyanide should be corrected to SW-846 Method 9010B or 9012A throughout the work plan documents.

Table 2-2, Required Containers, Preservatives, and Holding Times for Soil and Sediment, Page 2-7

19. ***Original Comment:*** Preparation and analysis method numbers should be specified for each type of analysis.

Remaining Issue: The preparation method numbers should be added, the arsenic method number should be moved from the total organic carbon row to its correct location, the TCLP pesticides method should be corrected to 8081A, and the ignitability method should be corrected from 102A to 1020A.

25. ***Original Comment:*** Standard operating procedures (SOPs) have been included for both traditional purging and low-flow purging of monitoring wells. Similarly, this section indicates that samples may be collected with either a bailer or a low-flow pump. This section should describe the circumstances under which each procedure and sampling equipment will be used. However, it should be noted that sampling using a procedure substantively equivalent to the USEPA Region 2 Ground Water Sampling - Low Stress (Low Flow) Purging and Sampling is generally required. This procedure includes protocols for sampling low yielding wells which do not include the use of bailers. Consequently, extenuating circumstances will be required before the use of bailers for sampling groundwater will be found to be acceptable.

Remaining Issue: The revised text (pg. 2-13) indicates that "in instances where groundwater is greater than 40 feet below grade, clean double check valve bailers will be utilized for sample collection." However, the previous response to this comment indicated that "bailers will only be used if low flow techniques are not capable of drawing water from the 40 foot depth across the site." As the Final Field Master Sampling Plan is now written, there appears to be a presumption that bailers will be used wherever the water table is 40 feet below ground surface. However, as previously indicated in the remaining issues identified regarding General Comment No. 1 in the February 14, 2001, Review of Draft Response to Comments, low flow sampling techniques should be used unless it is clearly demonstrated that it is not possible to do so. Bailers should be used to purge wells and collect groundwater samples only as a last

resort. Reasonable efforts should be made to obtain pumps capable of lifting water from a depth of 40 or more feet, as required by site conditions.

FINAL MASTER QUALITY ASSURANCE PROJECT PLAN

Section 4.1, High Level DQOs, Page 4-1

35. ***Original Comment:*** The discussion/assessment of Data quality objectives (DQOs) is inadequate. The last sentence states that, "the detection limits achieved by the EPA's SW-846 organics and inorganics analyses are adequate to meet the DQOs except for groundwater." However, no DQOs are identified for the detection limits and no resolution to this problem is provided. Furthermore, accuracy and precision DQOs have not been addressed at all. Revise the QAPP to include this information

The discussion of DQOs should identify screening criteria to which the analytical results will be compared. Method detection and quantitation limits should be compared to the pertinent screening criteria. This comparison should be presented in the QAPP, and alternative analytical methodology should be evaluated for all analytes where the quantitation limit is greater than the screening criteria.

In addition, project-specific DQOs should be established for accuracy and precision. Use of method-specified criteria, as indicated in Table 4-1 should not be used for this purpose because the method-specified limits do not take into account project-specific requirements for data quality. Table 4-1 should be revised to specify limits of accuracy and precision, and this section should describe the basis for the selection.

Remaining Issue: The comment has not been addressed. In their response to the original comment, the contractor stated that "EPA Region IX risk based criteria will be used. When a laboratory is contracted, detection limits will be compared to the screening criteria and alternative methods will be evaluated if necessary. Accuracy and precision control limits are lab specific as per SW846, based on intra-laboratory control charting statistics." However, no changes to the document appear to have been made.

DQOs for this project should dictate that all detection and quantitation limits must be below the EPA Region IX risk based criteria referenced above. Prior to collection of samples, the contractor should demonstrate to EPA that all laboratory detection and quantitation limits meet this DQO or provide evidence that the level is technically unachievable.

DQOs for this project should also identify levels of accuracy and precision that are deemed minimum standards to support decision making. Accuracy and precision data provided in SW-846 are inadequate to meet this purpose, as are laboratory capabilities in some instances. Prior to collection of samples, the contractor should establish accuracy

criteria for all methods and analytes, ensure that the laboratory is capable of meeting the required criteria, and provide this information to EPA for review and approval.

Table 4-1, Precision, Accuracy and Completeness Objectives, Page 4-3

36. ***Original Comment:*** The table should specify method numbers for each type of analysis and project-specific accuracy criteria for each method.

Remaining Issue: The table has not been revised to add project-specific accuracy criteria as the contractor indicated in their responses to comments. "Method criteria" should be replaced with project-specific requirements, as described in Comment 35.

Table 8-2, Analytical Parameters and Reporting Limits, Page 8-2

46. ***Original Comment:*** The table presents "detection limits" for each constituent. However, it is unclear whether this refers to an actual method detection limit (MDL) or a estimated quantitation limit (EQL). It is recommended that the table be revised to provide both MDLs and EQLs. As discussed above, EQLs should be verified to be below project screening criteria or alternative methodology should be evaluated.

Remaining Issue: The response to comments indicated that the table would be revised to include both MDLs and EQLs. This has not been done. The table should be revised as indicated in the February 2, 2001, Draft Response to Comments.

Original Comment: Table 8-2 provides the quantitation limits for SW-846 Method 8240A. However, SW-846 Method 8260B has been identified as the analytical method for VOCs. Clarify and indicate when one method is chosen over another. Also, provide the quantitation limits for all compounds, not just the 8240A and Appendix IX semivolatiles and inorganic compounds. The QAPP should be revised to provide the limits for all of the compounds identified in Table 8-1.

In addition, some Appendix IX constituents are missing from the table (e.g., polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dioxins/furans). If the intent is to analyze samples for all Appendix IX constituents, the table should be revised to include a complete list of all Appendix IX compounds. Justify the exclusion of any of the Appendix IX compounds.

Remaining Issue: The comment has not been fully addressed. Reporting limit tables are included in the QAPP for Methods 8240A, 8270C, 8330, and metals. Separate tables should be included for methods 8081A, 8082, 8141A, 8151A, and 9010B (or 9012A), and the title of the table for volatile organics should be revised to reference Method 8240A.

FINAL SITE SPECIFIC WORK PLAN, PHASE I RCRA FACILITY INVESTIGATION

Section 2.1.3, SWMU 01 Sampling Rationale, Page 2-3

54. ***Original Comment:*** As discussed above, surface soil sampling appears inadequate to determine whether a release has occurred from the landfill, because a compacted soil cap was installed in 1978. Soil borings or test pits should be sampled to verify the contents of the landfill, determine the depth of landfill contents with respect to groundwater, and assess potential releases from the landfill contents.

Remaining Issue: See Comment 5 above regarding the addition of text describing institutional controls that the Navy will enforce limiting access to the landfill.

Original Comment: The Site Specific Work Plan indicates that four monitoring wells will be installed to sample groundwater quality. However, the Work Plan has not identified the zone of interest in which the screens will be set. The Work Plan should clearly indicate the target zone of interest (e.g., shallow water immediately below the water table) for setting the screens for the proposed monitoring wells.

Remaining Issue: As stated in the February 2, 2001, Draft Response to Comments, the Site Specific Work Plan was to be revised to indicate that the proposed monitoring wells will be screened in the shallow surficial aquifer. As further indicated in the February 14, 2001, Review of Draft Response to Comments, the portion of the shallow surficial aquifer intended to be sampled should also be more clearly specified. The Final Work Plan contains no mention of the depth at which groundwater monitoring wells at the Camp Garcia Landfill will be screened.

Section 2.3.1, SWMU 04 Site Summary, Page 2-8

57. ***Original Comment:*** The description of the former Area of Concerns (AOCs) is incomplete and inconsistent with the Consent Order. The cleaning/degreasing basin is identified in the Consent Order as AOC D, and the rags, absorbent, and grease storage area as AOC E. This discussion identifies AOC D as the rags, absorbent, and grease storage area, and does not describe the cleaning/degreasing basin. The discrepancy regarding the former AOC designations should be resolved, a paragraph should be added to describe the cleaning/degreasing basin operations, and the location of the four areas and associated sampling locations should be shown on a single site map.

Remaining Issue: In the first paragraph the storage area for rags, absorbent material, and grease was identified as AOC E. However, in the last paragraph the storage area for rags, absorbent material, and grease is identified as AOC D. This apparent inconsistency should be resolved.

Section 2.3.2, SWMU 04 Previous Investigation Results, Page 2-8

58. ***Original Comment:*** The AOC designations in this section are inconsistent with both Section 2.3.1 and the Consent Order. The discrepancies should be resolved.

Remaining Issue: The comment has not been addressed. The AOC designations remain inconsistent.

Original Comment: Surface soil samples adjacent to the two basins (i.e., hydraulic oil catch basin, cleaning/degreasing basin) are not adequate to assess releases from the basins. Samples should be collected at selected depths below the bottom of the basin to assess potential leaks in the basins themselves.

Remaining Issue: Section 2.3.3 now describes the collection of subsurface soil samples. However, the first paragraph states that no additional sampling will be conducted if arsenic is determined to be naturally-occurring. While the subsequent paragraphs indicate further subsurface soil sampling will be undertaken, this statement could be misinterpreted to indicate that the subsurface soil samples will not be collected if the arsenic is determined to be naturally-occurring. This potential confusion should be corrected by indicating that further surface soil sampling will not be undertaken if the arsenic identified at SWMU 4 is determined to be naturally occurring.

64. ***Original Comment:*** The text indicates that four monitoring wells will be installed, but Figure 2-10 shows five proposed monitoring well locations. The text should be corrected. In addition, the Work Plan has not identified the zone of interest in which the screens will be set. The Work Plan should clearly indicate the target zone of interest (e.g., shallow water immediately below the water table) for setting the screens for the proposed monitoring wells.

The text indicates that 16 soil borings will be advanced in the lagoons. The discussion should be expanded to describe the depth at which samples will be collected with respect to the clay/plastic liner and describe how the liner will be repaired upon completion of sampling.

Remaining Issue: The comment has not, and should be, addressed.

Table 3-2, Required Containers, Preservatives, and Holding Times for Soil and Ground Water Samples, Page 3-5

66. ***Original Comment:*** Multiple analytical methods are listed for each organic groundwater analysis, some of which are not applicable to the associated analysis. In addition, the methods listed are SW-846 methods, which are acceptable, but are inconsistent with the Master QAPP. The method numbers should be corrected.

Remaining Issue: The comment has not, and should be, addressed.

Section 3.5, Task 5: Investigation Reports, Page 3-11

68. ***Original Comment:*** The Project Management Plan indicates that a Draft Final RFI report will be prepared, whereas this section and the schedule in Section 6 indicate that only Draft and Final versions will be prepared. The discrepancies should be resolved. Also, an outline for the Phase I RFI report should be presented in this section.

    Remaining Issue: The comment has not been address in the revised text as indicated in the February 2, 2001, Draft Response to Comments.

Section 4, Project Management and Staffing, Page 4-1

69. ***Original Comment:*** The key project team members, their roles, and telephone numbers should be listed in this section. This list should not be limited to upper management, but should also include technical managers such as a project chemist, field team leader, QA officer, and/or health and safety officer. A similar list should be included that identifies subcontractors and the name and telephone number of the primary contact for each subcontractor.

    Remaining Issue: The comment has not been addressed in the revised text as indicated in the February 2, 2001, Draft Response to Comments.